



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0331; Project Identifier AD-2020-01703-T]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all The Boeing Company Model 757 airplanes. This proposed AD was prompted by significant changes, including new or more restrictive requirements, made to the airworthiness limitations (AWLs) related to fuel tank ignition prevention and the nitrogen generation system. This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0331; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0331; Project Identifier AD-2020-01703-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA

will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, the FAA issued

a final rule titled “Transport Airplane Fuel Tank System Design Review, Flammability Reduction, and Maintenance and Inspection Requirements” (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements that rule included Amendment 21-78, which established Special Federal Aviation Regulation No. 88 (“SFAR 88”) to 14 CFR part 21. Subsequently, SFAR 88 was amended by: Amendment 21-82 (67 FR 57490, September 10, 2002; corrected at 67 FR 70809, November 26, 2002), Amendment 21-83 (67 FR 72830, December 9, 2002; corrected at 68 FR 37735, June 25, 2003, to change “21-82” to “21-83”), and Amendment 21-101 (83 FR 9162, March 5, 2018).

Among other actions, SFAR 88 requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the final rule published on May 7, 2001, the FAA intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, the FAA has established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: single failures, single failures in combination with another latent condition(s), and in-service failure experience. For all four criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

The FAA issued AD 2012-12-15, Amendment 39-17095 (77 FR 42964, July 23, 2012) (AD 2012-12-15), which applies to all The Boeing Company Model 757 airplanes. AD 2012-12-15 requires revising the maintenance or inspection program to incorporate new limitations for fuel tank systems. AD 2012-12-15 also requires the initial inspection of certain repetitive AWL inspections to phase-in those inspections, and repair if necessary. Since the FAA issued AD 2012-12-15, the Airworthiness Limitations Section (ALS) of the Instructions for Continued Airworthiness (Boeing document D622N001-9) has been significantly revised by the manufacturer to correct technical and editorial errors and also to add new or more restrictive requirements. Many of those changes are related to fuel tank ignition prevention and the nitrogen generation system. Incorporating the revision required by this proposed AD would terminate all the requirements of AD 2012-12-15.

The FAA also issued AD 2018-20-13, Amendment 39-19447 (83 FR 52305, October 17, 2018) (2018-20-13), which applies to all The Boeing Company Model 757 airplanes; Model 737 airplanes, excluding Model 737-100, -200, -200C, -300, -400, and -500 series airplanes; and Model 767-200, -300, -300F, and -400ER series airplanes. For Model 757 airplanes, AD 2018-20-13 requires, among other things, revising the maintenance or inspection program to incorporate AWLs No. 28-AWL-23, 28-AWL-24, and 28-AWL-25. Since the FAA issued 2018-20-13, those AWLs have been revised, therefore, this proposed AD would require the incorporation of those revised AWLs. Incorporating the revision required by this proposed AD would terminate the requirements in paragraph (i)(2) of AD 2018-20-13.

The FAA has assessed the changes, including new or more restrictive requirements, that were made to the AWLs related to fuel tank ignition prevention and the nitrogen generation system. The FAA is issuing this AD to address ignition sources inside the fuel tanks and the increased flammability exposure of the center fuel tank

caused by latent failures, alterations, repairs, or maintenance actions, which could result in a fuel tank explosion and consequent loss of an airplane.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 757 Maintenance Planning Data (MPD) Document, D622N001-9, dated March 2020. This service information specifies airworthiness limitation instruction (ALI) and critical design configuration control limitation (CDCCL) tasks related to fuel tank ignition prevention and the nitrogen generation system.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations.

This proposed AD would require revisions to certain operator maintenance documents to include new actions (e.g., inspections) and CDCCLs. Compliance with these actions and CDCCLs is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by this proposed AD, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (k) of this proposed AD.

Differences Between this Proposed AD and the Service Information

Paragraph (g) of this proposed AD would require operators to revise their existing maintenance or inspection program by incorporating, in part, AWL No. 28-AWL-05, “Wire Separation Requirements for New Wiring Installed in Proximity to Wiring that Goes into the Fuel Tanks,” of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 757 Maintenance Planning Data (MPD) Document, D622N001-9, dated March 2020.

Paragraph (h) of this proposed AD would allow certain changes to be made to the requirements specified in AWL No. 28-AWL-05 as an option. Where AWL No. 28-AWL-05 identifies certain wire types for routing and installation of any new wiring under certain conditions, paragraph (h) of this proposed AD provides acceptable alternative wire types. Where AWL No. 28-AWL-05 identifies certain wiring sleeve material for new wiring installed under certain conditions, paragraph (h) of this proposed AD provides acceptable alternative wire sleeve materials.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 493 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

The FAA has determined that revising the existing maintenance or inspection program takes an average of 90 work-hours per operator, although the agency recognizes that this number may vary from operator to operator. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the FAA estimates the average total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

The Boeing Company: Docket No. FAA-2021-0331; Project Identifier AD-2020-01703-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD affects the ADs specified in paragraphs (b)(1) and (2) of this AD.

(1) AD 2012-12-15, Amendment 39-17095 (77 FR 42964, July 23, 2012) (AD 2012-12-15).

(2) AD 2018-20-13, Amendment 39-19447 (83 FR 52305, October 17, 2018).

(c) Applicability

This AD applies to all The Boeing Company Model 757-200, -200PF, -200CB, and -300 series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 28, Fuel.

(e) Unsafe Condition

This AD was prompted by significant changes, including new or more restrictive requirements, made to the airworthiness limitations (AWLs) related to fuel tank ignition

prevention and the nitrogen generation system. The FAA is issuing this AD to address ignition sources inside the fuel tanks and the increased flammability exposure of the center fuel tank caused by latent failures, alterations, repairs, or maintenance actions, which could result in a fuel tank explosion and consequent loss of an airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Maintenance or Inspection Program Revision

Within 60 days after the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in Section E. “Airworthiness Limitations – Systems,” including Subsections E.1 and E.3, of Section 9, Airworthiness Limitations (AWLs) and Certification Maintenance Requirements (CMRs), of Boeing 757 Maintenance Planning Data (MPD) Document, D622N001-9, dated March 2020; except as provided by paragraph (h) of this AD. The initial compliance time for doing the airworthiness limitation instruction (ALI) tasks is at the times specified in paragraphs (g)(1) through (12) of this AD.

(1) For AWL No. 28-AWL-01, “External Wires Over Center Fuel Tank”: Within 120 months after the most recent inspection was performed as specified in AWL No. 28-AWL-01.

(2) For AWL No. 28-AWL-03, “Fuel Quantity Indicating System (FQIS) – Out Tank Wiring Lightning Shield to Ground Termination”: Within 120 months after the most recent inspection was performed as specified in AWL No. 28-AWL-03.

(3) For AWL No. 28-AWL-14, “Main and Center Wing Tank Fueling Shutoff Valve Body and Actuator – Fault Current Bond”: Within 120 months after the most recent inspection was performed as specified in AWL No. 28-AWL-14.

(4) For AWL No. 28-AWL-20, “Center Tank Fuel Override Boost Pump Automatic Shutoff System”: Within 12 months after accomplishment of the actions

specified in Boeing Service Bulletin 757-28A0081 or Boeing Service Bulletin 757-28A0082, as applicable; or within 12 months after the most recent inspection was performed as specified in AWL No. 28-AWL-20; whichever occurs later.

(5) For AWL No. 28-AWL-21, “Over-Current and Arcing Protection Electrical Design Features Operation – Boost Pump Ground Fault Interrupter (GFI)”: Within 12 months after accomplishment of the actions specified in Boeing Service Bulletin 757-28A0078 or Boeing Service Bulletin 757-28A0079, as applicable; or within 12 months after the most recent inspection was performed as specified in AWL No. 28-AWL-21; whichever occurs later.

(6) For AWL No. 28-AWL-25, “Motor Operated Valve (MOV) Actuator – Lightning and Fault Current Protection Electrical Bond”: Within 72 months after accomplishment of the actions specified in Boeing Service Bulletin 757-28A0088, or within 72 months after the most recent inspection was performed as specified in AWL No. 28-AWL-25, whichever occurs later.

(7) For AWL No. 28-AWL-26, “Center Tank Fuel Boost Pump Power Failed On Protection System”: Within 12 months after accomplishment of the actions specified in Boeing Service Bulletin 757-28A0105, or within 12 months after the most recent inspection was performed as specified in AWL No. 28-AWL-26, whichever occurs later.

(8) For AWL No. 28-AWL-30, “AC Fuel Pump Fault Current Bonding Jumper Installation, Main and Center Tank”: Within 24 months after the effective date of this AD, or within 72 months after the most recent inspection was performed as specified in AWL No. 28-AWL-30, whichever occurs later.

(9) For AWL No. 28-AWL-33, “Full Cushion Clamps and Teflon Sleeving Installed on Out-of-Tank Wire Bundles Installed on Brackets that are Mounted Directly on the Fuel Tanks”: Within 24 months after the effective date of this AD; or within 144 months after accomplishment of the actions specified in Boeing Service Bulletin

757-57A0064 (Part 2 through Part 10 of the Work Instructions); or within 144 months since the most recent inspection was performed as specified in AWL No. 28-AWL-33; whichever occurs later.

(10) For AWL No. 47-AWL-04, “NGS – NEA Distribution Ducting”: Within 17,300 flight hours after accomplishment of the actions specified in Boeing Service Bulletin 757-47-0001 or Boeing Service Bulletin 757-47-0005, as applicable; or within 17,300 flight hours after the most recent inspection was performed as specified in AWL No. 47-AWL-04; whichever occurs later.

(11) For AWL No. 47-AWL-05, “NGS – Cross Vent Check Valve”: Within 17,300 flight hours after accomplishment of the actions specified in Boeing Service Bulletin 757-47-0001 or Boeing Service Bulletin 757-47-0005, as applicable; or within 17,300 flight hours after the most recent inspection was performed as specified in AWL No. 47-AWL-05; whichever occurs later.

(12) For AWL No. 47-AWL-07, “NGS – Thermal Switch”: Within 48,000 flight hours after accomplishment of the actions specified in Boeing Service Bulletin 757-47-0001 or Boeing Service Bulletin 757-47-0005, as applicable; or within 48,000 flight hours after the most recent inspection was performed as specified in AWL No. 47-AWL-07; whichever occurs later.

(h) Additional Acceptable Wire Types and Sleeving

As an option, when accomplishing the actions required by paragraph (g) of this AD, the alternatives specified in paragraphs (h)(1) and (2) of this AD are acceptable.

(1) Where AWL No. 28-AWL-05 identifies wire types BMS 13-48, BMS 13-58, and BMS 13-60, the following wire types are acceptable: MIL-W-22759/16, SAE AS22759/16 (M22759/16), MIL-W-22759/32, SAE AS22759/32 (M22759/32), MIL-W-22759/34, SAE AS22759/34 (M22759/34), MIL-W-22759/41, SAE AS22759/41 (M22759/41), MIL-W-22759/86, SAE AS22759/86 (M22759/86), MIL-W-22759/87,

SAE AS22759/87 (M22759/87), MIL-W-22759/92, and SAE AS22759/92 (M22759/92); and MIL-C-27500 and NEMA WC 27500 cables constructed from these military or SAE specification wire types, as applicable.

(2) Where AWL No. 28-AWL-05 identifies TFE-2X Standard wall for wire sleeving, the following sleeving materials are acceptable: Roundit 2000NX and Varglas Type HO, HP, or HM.

(i) No Alternative Actions, Intervals, or CDCCLs

After the existing maintenance or inspection program has been revised as required by paragraph (g) of this AD, no alternative actions (e.g., inspections), intervals, or CDCCLs may be used unless the actions, intervals, and CDCCLs are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (k) of this AD.

(j) Terminating Actions for Certain AD Requirements

Accomplishment of the revision required by paragraph (g) of this AD terminates the requirements specified in paragraphs (j)(1) and (2) of this AD for that airplane.

(1) All requirements of AD 2012-12-15.

(2) The requirements in paragraph (i)(2) of AD 2018-20-13.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(I) Related Information

(1) For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3553; email: takahisa.kobayashi@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet

<https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on April 15, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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